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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/380,654	04/13/2001	Ehud Dafni	043/01136	2888

7590 05/17/2004
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EXAMINER

CHOOBIN, BARRY

ART UNIT	PAPER NUMBER
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2625

DATE MAILED: 05/17/2004

14

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/380,654

Applicant(s)

DAFNI

Examiner

Barry Choobin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 and 55-58 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 7-10, 13-18, 22-28 and 55-58 is/are rejected.
- 7) ☒ Claim(s) 4-6, 11, 12 and 19-21 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7, 11.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statements (IDS) submitted on May 30, 2000 are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner (paper 7 and paper 11).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 7-10, 28, 56-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohhashi (US 5,315,556) in view of Albert (US 4,144,457).

As to claims 1, 28, 56-58, Ohhashi discloses a method for modifying a planar image slice in a CT scanner having a predetermined reconstruction angle (column 8, lines 5-11), comprising: reconstructing an image of the slice using initial X-ray attenuation data acquired along an initial scan path sector (Fig.14); and

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modifying the image to provide a modified image of the slice (column 8, lines 42-47), Ohhashi does not disclose expressly responsive to additional X-ray attenuation data acquired along an additional scan path sector in a vicinity of the axial position of the slice, the sector having an angular extent substantially less than the reconstruction angle.

Albert discloses responsive to additional X-ray attenuation data acquired along an additional scan path sector in a vicinity of the axial position of the slice, the sector having an angular extent substantially less than the reconstruction angle (column 18, lines 26-53 and Fig.9).

Ohhasi and Albert are combinable because they are from same field of endeavor (Tomography x-ray scanning).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use additional x-ray attenuation data along an additional scan path of Albert with Ohhashi in order to scan patient by each source in sequence rather than simultaneously (column 18, lines 48-53).

The suggestion/motivation for doing so would have been producing computed tomographic X-ray images more economically, more rapidly and with less massive and complex apparatus (column 2, lines 46-50 of Albert).

As to claim 2, Ohhasi discloses a defining a region of interest within the image slice, wherein modifying the image comprises modifying only a portion of the image corresponding to the region of interest (Fig.14, 105).

As to claim 3, Ohhashi discloses defining the region of interest comprises

identifying an object of interest and altering the region of interest in response to movement of the object (column 17, lines 33-37).

As to claims 7-9, Ohhashi discloses the data acquired along the initial and additional scan path sectors comprises multi-slice data acquired along the sectors of the scan path (column 2, lines 1-5).

As to claim 10, Ohhashi discloses modifying the image responsive to the additional attenuation data comprises processing the additional attenuation data and the initial attenuation data to produce an image data matrix and adding the matrix to the image (Fig.10, #28).

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 13, 16, 17, 22, 23, 25 and 27 are rejected under 35 U.S.C. 102(b) based upon a public use or sale of the invention Ohhashi.

As to claim 13, 23, 25 and 27, Ohhahshi discloses a method for producing a CT image of a region of interest within the body of a subject, comprising:
reconstructing a CT image of a slice of the body; defining the region of interest; and

updating the CT image only in the region of interest, wherein the image of the region of interest encompasses only a portion of the CT image of the slice (Fig.14).

As to claims 16 and 17, Ohhashi discloses the region of interest is determined based on an expectation of change in the CT image in the region of image (column 2, lines 36-44).

As to claims 18, 22, Ohhashi discloses image is a multi-slice image and wherein the position of the slices are determined based on a determination of the position of the object with respect to the slices (column 2, lines 37-43).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohhashi in view of Seki (US 5,754,623).

As to claim 14, Ohhashi discloses limitation of claim 13 (see claim 13).

Ohhashi does not disclose expressly superimposing the CT image of the region of interest on another CT image.

Seki discloses superimposing the CT image of the region of interest on another CT image (column 28, lines 27-37).

Ohhashi and Seki are combinable because they are from same field of endeavor of X-ray CT scanning.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to provide the system of Seki with Ohhashi in order to determine isocenter (column 28, lines 35-37).

The suggestion/motivation for doing so would have been providing a radiotherapy system enabling a reduction in the number of apparatuses constituting a radiotherapy system, realizing a simple and compact hardware configuration for the system, and contributing to higher-precision therapy planning and shorter planning time (column 4, lines 7-14).

Therefore, it would have been obvious to combine Seki with Ohhashi to obtain the invention as specified in claim 14.

As to claim 15, the limitations recited in this claim is similar to limitation in claim 1.

Therefore, claim 15 is analyzed and rejected as claim 1.

Claims 24 and 55 are not patently distinct. But for applicant's convenience the Examiner provides a prior art in which a biopsy needle with computed topography application is discussed (US 4,981,142).

Allowable Subject Matter

8. Claims 4-6, 11-12, 19-21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 4981142 to Dahman.

US 5881124 to Giger et al.

US 5297215 to Yamagishi.

US 5647360 to Bani-hashemi et al.

US 5960102 to Van Eeuwijk et al.

US 5825842 to Taguchi.

US 6219441 to Hu.

US 6370218 to Toht et al.

US 5909477 to Crawford et al.

US 5966422 to Dafni et al.

US 6072851 to Sivers.

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CONTACT INFORMATION

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barry Choobin whose telephone number is 703-306-5787. The examiner can normally be reached on M-F 7:30 AM to 18:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on 703-308-5246. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Barry Choobin
May 13, 2004


BHAVESH M. MEHTA
SUPERVISORY PATENT EXAMINER
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